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THE  
COMPARATIVE MERITS OF ABDOMINAL SECTION  
AND VAGINAL INCISION

IN THE TREATMENT OF  
EXTRA-PERITONEAL HEMATOCELE,  
WITH  
REPORT OF A SUCCESSFUL CASE BY SECTION.

BY

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*Professor of the Medical and Surgical Diseases of Women in the Medical Department  
of Wooster University.*



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THE following case was the occasion of these investigations. As its clinical features, surgical details, and pathology are referred to in the argument and conclusions of this paper, it has been deemed advisable to reproduce the case in full.

Mrs. N. L., aged 36, married three years to her second husband; no children, but four or five abortions of from six weeks to four months; menstruation painless, at intervals of three or four weeks; vaginal discharge scant; applied at my clinic on April 4, with the following history:—

Three weeks ago, during a menstrual period, she did a washing and had her feet thoroughly wet and chilled. Her period was checked, and on the next day she began to have sharp, steady pain in the abdomen and back; could not walk or stand long, could not sleep, and lost her appetite. Micturition became painful and difficult, and defecation caused much suf-

fering. The pain was not sufficient to continually confine her to bed, but she was unfit and unable to do work, and had been compelled to rest during the greater part of these three weeks. About four days after the cessation of the menses she began to flow again, and has continued so every few days. She had suffered from inflammation of the bowels eight years ago, and had spells of "womb trouble" since, whenever she overdid. Never had any other sickness. Never noticed any abdominal enlargement, except that she bloated quite often.

She had a sallow complexion, was somewhat emaciated, with a facial expression of one in great pain. The entire hypogastric region was found exceedingly sensitive to the slightest touch or gentle percussion. The percussion sound was dull over the left iliac region. The cervix uteri was near the symphysis, a hard tender mass filled the posterior vault, of which the mucous lining felt doughy. The local peritonitis was treated by rest, opiates, hot vaginal douche, and poultice. The temperature, which was 101° F. on admission to the hospital, soon became normal, and her condition was so much improved that she left at the end of two weeks. There was, however, still a large mass filling up the pelvis and extending above the symphysis with ill-defined outlines. She left with the understanding that she could be readmitted at any time her condition should grow worse.

On her return to the hospital, May 7 (nineteen days later), it was found that the mass in the posterior cul-de-sac had increased considerably in size, gave a decided sense of fluctuation, and so pressed against the sacrum as to quite occlude the rectum; only gases and liquid contents could pass; an enema could not be retained. The cervix was low in the vagina, immovably fixed behind the symphysis; the fundus uteri could not be felt. On the abdomen the contour of a tumor was visible, occupying the left hypogastric region reaching just beyond the umbilicus. Palpation showed a well-defined, rounded, immovable tumor with distinct fluctuation, not tender to pressure. Bimanual examination proved the abdominal and pelvic tumor to be one fluctuating mass, with distinct, rounded outline, extending slightly beyond the umbilicus above, and, with the bulging of the posterior vaginal vault, completing the ovoid below. The patient had occasional sharp shooting-pains in the left side; there was no fever; she could not retain any food, nor could her bowels be moved; the urine was normal, and now passed without difficulty.

As the patient could give no history of a previously existing tumor; as a sharp, pelvic peritonitis had just been encountered, and the mass had increased in bulk and the fluctuation had developed, the diagnosis of pelvic abscess had its strong probability, though the absence of fever was a



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negative element. With the view of opening the abscess through the vagina, or clearing up of the diagnosis if it proved to be no abscess, the patient was etherized at the clinic on May 9, and four attempts at aspiration were made under antiseptic precautions, without relieving any pus; only once about 3 i of bloody serum was withdrawn. She recovered from the ether and operation without any bad symptom, but continued vomiting and in distress. On May 11 Dr. F. J. Weed kindly examined her with me, and inclined to the opinion that it was an ovarian cystoma, and sanctioned the proposed abdominal section, under all circumstances, as her only chance of relief.

Accordingly, on May 14, at 9.30 A.M., in the presence of Drs. F. J. Weed, F. E. Bunts, F. J. Havlicek, Anna K. Scott, and ten members of the senior class, assisted by Drs. A. F. Spurney and Lilian G. Towsley, the operation was performed. The patient was etherized, and the abdomen thoroughly cleansed with soap, bichloride, and ether. The instruments were scalded with boiled hot water, no antiseptics being used on them.

The incision in the linea alba was ultimately enlarged so that it extended from the umbilicus to the symphysis. At the latter point, the bladder, which was displaced to the right and elevated, bulged into the wound, and barely escaped injury. The hand introduced into the abdomen found a rounded, fluctuating tumor, movable from side to side, attached above quite firmly to loops of intestine, free at the sides above the pelvic brim, and again attached to the sides of the pelvic cavity, higher on the left than on the right. The uterus could not be felt by the fingers (with difficulty introduced between the tumor and the symphysis), though they reached the pubic arch. The anterior wall of the tumor was covered by serous membrane above, while in its lower half the covering seemed to consist of longitudinal muscular fibres. The whole gave the impression, after failing to find the uterus, as if it were a fibro-cyst. Under this impression, to facilitate the contemplated separation of the intestinal adhesions and the subsequent delivery of the uterine tumor, the parietal incision had been enlarged. The fluctuation was so marked that an aspirator needle was introduced to draw off the fluid, but none would flow. While considering the advisability of using a Tait trocar, a few small black clots escaped by the puncture made by the needle. The puncture was, therefore, enlarged, and pressure made on the tumor, when quite a quantity of the same material escaped. Additional pressure from the vaginal cul-de-sac was made by Dr. Weed, and the opening enlarged to admit four fingers, when a number of transverse partitions were broken up, and by degrees the entire contents of the sac

evacuated, and its cavity irrigated with hot boiled water. The abdominal cavity was then similarly flooded. At the bottom and through the anterior wall of the sac the small uterus could be felt. There was but a thin partition between the fingers in the vagina and those in the sac. The advisability of drainage through the vagina was duly considered, and abandoned as unnecessary and not conducive to a thorough antisepsis. A glass drainage-tube was introduced to the bottom of the sac and another placed in the abdominal cavity. In suturing the walls of the sac to the parietal incision it was found impossible to safely put a suture through the softened, short fringe (probably portion of left broad ligament) of the sac wall, so that the left cornu of the uterus was sutured to the abdominal wall to fill the gap. Above, the adherent intestines helped to roof in the sac. The abdomen was closed with silk all the way, and superficial sutures. The patient was under ether about one and a half hours, and bore it poorly towards the end, so that a number of subcutaneous injections of brandy were made. The amount of clots removed was estimated at fully two pounds. The patient rallied after the operation, and at the end of twenty-four hours her pulse was 98, temperature 100°. The bloody serum in the tubes was at first drawn off every half-hour by means of a glass male syringe, with rubber tubing attached to the nozzle. When the secretion became less profuse it was sucked out once in two or three hours, and after a few days the suction process became unnecessary. To prevent the stagnation of any fluid in the tubes, wicks made of absorbent cotton were introduced to the bottom (after cleaning with syringe), and these were changed whenever damp. Thus the tubes were kept continually empty, almost dry.

May 16. Pulse 84, temperature 99.8. Had vomited but once on the P.M. of the first day, and had since retained beef-tea and water as much as allowed. Gases passed freely per rectum; abdomen remained flat, in fact, somewhat retracted. She felt comfortable, requiring no anodynes, and slept for an hour or two at intervals. The tube in the abdomen had broken off on a level with the parietes, but the remaining piece was fortunately removed without difficulty; a smaller glass tube was introduced. For fear of a similar accident, the tube in the sac was removed and replaced by a rubber one. The second tube was found badly cracked, ready to succumb to abdominal pressure at any time.

May 17. Pulse 80, temperature 99.5°. Removed smaller glass tube. Bowels moved freely (five times) without pain on 3 ii of magnes. sulph.

May 19. Pulse 106, temperature 100.5° in the A.M., 101° P.M.; quite an offensive odor perceptible on withdrawing cotton wick from



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tube. Wash out sac with sol. merc. bichl. (1 : 5,000) every six hours, give quin. sulph. 8 grs. and magnes. sulph. 3 ii.

May 20. Pulse 86, temperature 99°. Odor barely perceptible on withdrawing the wick; continued irrigation twice daily.

May 22. (This constitutes the subsequent history after the report had been read.) Pulse 82, temperature 99.2°. Remove balance of suture, some having been removed yesterday. Union perfect. The patient continued without a bad symptom; was allowed to get off the bed to use the vessel on June 7; allowed to walk about June 12; and discharged, entirely well, June 22.

July 6. Vaginal examination of the patient at my office showed the fundus uteri adherent to the abdominal wall at lower angle of cicatrix; the cervix pointing backward towards sacrum; a puckered condition of the left posterior fornix indicating the remnants of former bulging sac.

It has been clinically well established that small, extra-peritoneal hematoceles, and even some very large ones, will become absorbed in time and require no surgical interference. I would, therefore, limit the scope of this study to such cases only as require urgent relief, either because absorption does not take place after due expectancy, or because symptoms of suppuration have rendered further delay dangerous, or because, as in the case reported, exhaustion from inability to retain food threatens the life of the patient. While my case might be included in the first class, absorption not having begun nine weeks after the onset of the disease, nevertheless it was the threatened exhaustion, the inability to retain food by stomach or rectum, which rendered surgical relief a necessity.

If the diagnosis had been correctly made, I should have followed the well-beaten path pointed out by the majority of recognized authorities, and should have operated by incision in the vagina. The rapid recovery of my patient, the physical ease and mental comfort with which the after-treatment was managed, have induced me to compare the published experience and results achieved by those prominent operators of the present day whose publications were accessible.

The various text-books were first consulted. Thomas (ed. 1880) does not mention abdominal section, as it was not as yet a popular operation. Emmet (ed. 1884) seems to ignore abdominal section as a method of relieving extra-peritoneal hematocoele. Byford (ed. 1887), even at this late day, has overlooked the fact that such a method existed. Parvin, in his "*Winkel's Diseases of Women*," p. 617, says: "Operative interference is admissible only when rupture of the tumor seems inevitable, and then a free incision must be made at the point nearest the threatened perforation, antiseptic precautions being strictly observed. Subsequent

evacuation will be secured by regular irrigation of the sac, or by drainage through the vagina or abdominal walls." The ominous silence concerning the details of this "drainage through the abdominal walls" leaves one at a loss to know whether the author means operation by abdominal section or merely incision of an extra-peritoneal abscess; probably the latter. In the "Am. Syst. of Gyn." Van de Warker gives one cold comfort when he says, p. 769, Vol. I., "Opening by the abdomen is not justifiable." He says this in connection with intra-peritoneal hematocele, but allows the inference that he means the extra-peritoneal as well; for of the latter he says, "The treatment of hematoma is based upon the same general plan." Beckwith, the author of the article on hematocele in the "Reference Hand-Book of the Med. Sciences," says: "When the swelling is inaccessible by the vagina and rises high up into the abdomen, an incision should be made in the median line in the hypogastric region and a drainage-tube inserted, to be followed by frequent washing out of the cyst." While direct allusion is here made to abdominal section, it is indicated, according to this authority, in such cases only where the vaginal incision is impossible. This admits of the conclusion that the writer is decidedly in favor of vaginal incision where that is possible.

Having exhausted American text and reference books without finding ground to stand on, I ventured to consult "The Manual of Gynecology," by Hart and Barbour (Wood's ed., January, 1883), and there found at least a cue to further research. I quote from this work, p. 183, Vol. I.: "Recently Mr. Lawson Tait has recommended that some pelvic abscesses be opened by abdominal section, as we often get very tedious cases when they perforate into the bowel. The following was the treatment in one of six cases in which he performed it." "I determined to open it from above. . . . I found a large cavity, containing about two pints of fetid pus with decomposing blood-clots. This I carefully cleansed out, and after having *united the edges of the opening into the cyst carefully to the abdominal wound* [Italics, mine], I fixed in one of Koeberle's drainage-tubes five inches long. . . . The patient went home cured on the thirtieth day." "Tait's cases were chiefly suppurating hematoceles. (Tr. of Lond. Med. Chir. Soc., Vol. 62.)"

The journals of the past ten years or more record isolated cases that have recovered by rest and expectancy, as also such as have been cured by puncture or vaginal incision; and they record deaths following the treatment by expectancy as well as by operation. I exclude the treatment by rest as lying beyond the scope of these observations. Puncture is unsurgical, and now obsolete. Vaginal incision and abdominal section then remain to be considered as means of surgical relief. It is not essen-



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tial to reproduce all the cases treated by vaginal incision hitherto reported, whether successful or not. I have selected the details of a few, merely to exemplify their characteristics and their serious nature. On the same principle I have selected the details of a few operations by abdominal section, including my own, to place them side by side, in order that, by their contrast, the salient features of both methods can be easily pointed out and conclusions definitely arrived at.

The case of Minot,<sup>1</sup> reported at the Boston Obstetrical Society, is exceedingly instructive, and may well serve as a pathological text. The tumor extended within two inches of the navel. The incision was made through the vagina. Progress toward convalescence was unimpeded, and on the fourteenth day after the operation the patient began to sit up. "The next evening, while the house-pupil was syringing the cavity, the patient suddenly uttered an exclamation of pain, and said something had given way within her. No more force had been employed than usual, and the opening was large enough to allow a free regurgitation of the injection, most of which, on this occasion, was found in the bed-pan. Collapse immediately ensued, and the patient died early the next morning." Dr. Fitz showed the pelvic organs. These gave evidence of old as well as recent adhesions, and a staining of some of the tissues, "evidently from the fluid used for injection. . . . The inner surface of the hematocele was rough, of a dark bluish-slate color; it could be readily detached as a coherent membrane, and the cavity contained a somewhat offensive, dirty-gray, soft mass, apparently disintegrating blood-clot. Firm trabeculæ extended across the cavity at certain parts." There was also found, between the uterus and bladder, a circumscribed cavity "as large as a fist," containing encysted serum.

Before proceeding farther, I would call attention to the cause of death in this case, from *penetration of injection fluid into the abdominal cavity*; to the *presence of a disintegrating blood-clot two weeks after operation*; to the *"firm trabeculæ across the cavity at certain parts;"* and, lastly, to the *presence of encysted serous fluid*.

Paul Zweifel,<sup>2</sup> in the "Arch. f. Gyn., xxii. 2," reports four cases opened by incision and irrigation of the vagina, with one death. "In three cases the operation was indicated by the presence of symptoms due to degeneration of the contents of the sac. In the fatal case it is his opinion that, if he had operated sooner, the result would have been different. He enumerates twenty-six cases treated by this method, with four deaths. According to Mundé, *forcible injections were directly responsible in two of*

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<sup>1</sup> Boston Med. and Surg. Jour., May 25, 1876.

<sup>2</sup> Abstract Am. J. Obst., February, 1885.

*these fatal cases.* He (Z.) concludes that incision "is intended especially as a means of relief for very large extravasations with threatening symptoms or of slow tendency toward absorption. As a method, it is certainly safer than laparotomy (Martin has had three fatal cases), and far easier of performance, as well as followed, in all probability, by a shorter convalescence (in Baumgärtner's case full union occurred only after four weeks)." Zweifel's fourth case was "on her feet" in two weeks.

The same author,<sup>1</sup> in the "Arch. f. Gyn. xxiii. 3," reports another case (successful), and again reiterates the opinion that incision through the vagina is the treatment *par excellence*. The latest statistics from various methods of treatment are given as: 1. Incision *per vaginam*, thirty reported cases, with three deaths, 10 per cent.; 2. Puncture, mortality of, 15 per cent.; 3. Expectant, mortality of, 16 per cent. In the paper previously quoted, twenty-six cases are reported, with four deaths; evidently a discrepancy attributable to the resurrection of one of the dead. Although Zweifel concedes Baumgärtner's case a success, he underestimates the deaths following vaginal incision, exaggerates the deaths after abdominal section, as will be seen presently, and seems to be ignorant of Tait's cases, reported in 1882.

Martin,<sup>2</sup> of Berlin, in a pamphlet entitled "Ein Beitrag zur Festschrift & C.," published in 1882, "has collected and tabulated ten cases (extra-peritoneal hematoma), four of which were met and treated by him. The tumors varied in size, sometimes being as large as a man's hand. . . . The contents of the tumors were almost entirely blood-clots, and only slight hæmorrhage followed their removal. Laparotomy was required in all of his cases, and was followed by recovery in two of the four."

Referring to Zweifel's publications, at the same time corroborating Martin's assertions and describing his method of operating, Duevelius,<sup>3</sup> in the "Archiv. f. Gyn., xxiii. 1," says: "In a recent paper by Zweifel the treatment of hematoma by laparotomy is condemned, because three cases so treated by Martin ended fatally; and the method of vaginal incision is recommended, because, out of four cases so treated, three recovered. Now, up to the present, Martin's correct results are: eight laparotomies, with six recoveries, one case ending fatally from septic peritonitis, one from collapse, no cause being evident at the autopsy. In considering this method of treatment in connection with others, two questions are to be answered: 1. Is the danger lessened? 2. Is the chance of radical cure and shorter convalescence greater? By the vaginal incision and subse-

<sup>1</sup> Abstract Am. J. Obst., June, 1885.

<sup>2</sup> Abstract Am. J. Obst., June, 1883.

<sup>3</sup> Abstract Am. J. Obst., Sept., 1885.



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quent cleansing of the sac the dangers are: 1. Hæmorrhage from the bottom of the sac. Rarely could this be controlled by ligature, and the greater would be the difficulty, the deeper the source of the hæmorrhage. The tamponade of the sac might alone answer. Even though this answer, the procedure is not free from danger; for, owing to the rottenness of the borders of the sac, perforation into the peritoneal cavity is likely. Far otherwise is the case during laparotomy. The operator can proceed with caution and ligate any vessel requiring ligature. 2. The clots cannot often be removed without the use of force, and this force may lead, 3. To rupture into the peritoneal cavity. Further, healing of the sac will take place most rapidly where its contents have been most thoroughly removed; and obviously this can be accomplished most thoroughly by laparotomy. As to the operation itself, in the majority of cases of extra-peritoneal hematocoele stout adhesions will be found to exist between the tumor and the intestines. These adhesions by no means constitute serious obstacles. Great care is necessary in the cleansing of the sac, in tying every bleeding vessel. A drainage-tube is to be passed into the vagina and closure of the sac from the abdominal cavity attempted. Ordinarily, however, owing to the rottenness of the sac, this is impossible. It is sufficient, then, to attach its borders to the drainage-tube."

Mundé has reported three cases successfully treated by vaginal incision. The first<sup>1</sup> supposed to be a pelvic abscess, "the withdrawal of only blood by aspiration led to the diagnosis of hematoma. Eighteen ounces of coagulated blood escaped. A tumor was then recognized within the cavity, of the size, form, and consistence of the human heart. The patient's condition did not seem to justify him in manipulating the tumor to discover its exact nature, but it was thought it might be a sarcoma. The cavity was washed out with a solution of corros. subl., 1 to 5,000; a drainage-tube was introduced, and also iodoform gauze. Within a day or two frequent irrigations with the disinfectant were begun, but the temperature rose to 103° to 104° F., falling after each irrigation. As it was evident that the rise of temperature was of septic origin, the cavity of the hematoma was explored, and the tumor referred to was found to be composed of coagulated blood, and breaking down. It was scraped out, and weighed eight ounces; the cavity from which it came measured five inches in diameter. The patient made an uninterrupted recovery."

In a paper<sup>2</sup> bearing on this subject Mundé says: "There are three methods of dealing with this question, and each method has had, and still has, its retainers: 1. Expectant treatment. . . . 2. Puncture. . . .

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<sup>1</sup> Am. J. Obst., September, 1885.

<sup>2</sup> New Yorker Med. Presse, Vol. I., No. 1, December, 1885.

3. *Free incision, followed by drainage and irrigation*, whereby the coagulated blood is entirely removed through an incision *per vaginam*, and the cavity is kept clean and aseptic through constant or frequent drainage and irrigation. A. Martin's proposition to treat these cases by laparotomy, notwithstanding Baumgärtner's one successful case, has found no adherents since Martin's three cases died. . . . The danger from incision and irrigation of the blood-cavity is secondary hæmorrhage and septicæmia. Hæmorrhage is scarcely to be expected if the incision is made some weeks after the formation of the tumor, and if it occur, we can temporarily use the tampon; sepsis may be prevented by careful antisepsis. . . . Mundé's opinion agrees with Zweifel's (whom he calls the latest authority on this subject), and is, that free vaginal incision of large pelvic hematoma is by no means as dangerous as has been thought."

These extracts from Mundé's paper show him to be a close follower of Zweifel, whose errors he copies and whose method he emphatically substantiates. Mundé, too, has failed to discover that, simultaneously with Martin, Tait had, in 1882, by a better method, successfully treated cases by abdominal section. He would not otherwise single out Baumgärtner as being the only one whose operation was followed by recovery.

Byford,<sup>1</sup> in "a study of the causation and treatment of pelvic hæmatocele," reports a case opened by vaginal incision, from which I quote an interesting feature occurring two weeks after the operation: "Having just read, for the first time, the article of Apostoli and Doleris, in the 'Archiv de tocol.' for November, 1885, I reproached myself for my timidity in not thoroughly curetting the cavity at the time of the operation, and thus getting rid of this foul-smelling mass in advance. Finding the patient up and feeling quite well, I ordered her to bed, and proceeded to scoop out the abscess with Thomas' dull curette. I went over every part of it *carefully and gently* [Italics, mine], without eliciting any complaint from the patient, and found it still to extend above the top of the uterus at the left side. Upon using a 1½% sol. of carbolic acid she suddenly experienced such acute pain in the left iliac region, where the lumps were situated, that I thought I had made an opening into the abdominal cavity. The lumps, which had almost disappeared, became more prominent, bloating commenced, and tenderness became marked. Pulse 70, temperature 97½° F." This was followed by chills, gradual rise of temperature, and the tenderness did not disappear for six days. The patient recovered in thirty days.

The author then continues: "It is singular with what unanimity the

<sup>1</sup> Am. J. Obst., November, 1886.



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text-books recommend non-interference for hematoma and hematocele until dangerous, or at least serious, symptoms arise. After performing the above-reported operation I searched them in vain for authority in so doing, but was met everywhere with echoes of Nélaton's conservative cry of alarm. Finally, obtaining a copy of Billroth and Luecke's 'Frauen-Krankheiten,' second edition, 1886, I found evacuation recommended by Baudl," "when a large accumulation remains stationary for weeks without showing any tendency to resorption." ". . . That the treatment thus formulated is decidedly in advance of anything that has gone before it must be acknowledged. . . . The plan adopted in the case reported, but only imperfectly executed, of breaking up the entire clot, but avoiding any scraping of the walls of the cavity, proved to be as efficient as imperfect curetting, and vastly less dangerous than a thorough curetting of the cavity walls. . . . The possibility of the presence of extra-uterine pregnancy, ovarian tumor, serous peritonitis, fibroid or fibro-cystic tumor of the uterus, etc., makes it advisable always to use an aspirating needle previous to using the knife. Abdominal section for such tumors as cannot be safely reached through the vagina or rectum is purposely left out of consideration, as a different set of dangers are involved and a separate discussion would be required."

Byford's lamentation on account of the woefully conservative tone of our text-books, with reference to the modern treatment of hematocele and hematoma, finds me fully in accord. I heartily endorse his strictures. In his vain search, however, of the literature of the day, for instances of vaginal incision, he neglected to pay any attention to what had been accomplished by the abdominal method, which he restricts, with Beckwith, to those cases only "that cannot be safely reached through vagina or rectum."

Gusserow,<sup>1</sup> in the "Archiv f. Gyn., XXIX. 3," is the only authority who can report eight successful cases treated by vaginal incision without sepsis and without other untoward symptoms. He thinks laparotomy in these cases "entirely unnecessary."

Philips<sup>2</sup> reported to the Obstetrical Society of London a case treated first by aspiration, and then by opening of the vaginal *cul-de-sac* with Paquelin cautery, with good recovery. In the discussion which followed, Dr. Gallabin remarked that "he had never intentionally opened a hematocele, but had twice made an exploratory abdominal section with good result in cases which turned out to be hematocele, not dependent on extra-uterine gestation. In both cases there was an elastic tumor reaching to the

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<sup>1</sup> Abstract Am. J. Obst., January, 1888.

<sup>2</sup> Brit. Med. Journ., Oct. 15, 1887.

umbilicus. In both the peritoneal cavity was washed out with hot water, the contents of the hematocele having in one of them been in an entirely fetid condition. In one of these cases pyo-salpinx was found and removed, and the advantage of the abdominal section was its allowing the removal of sources of mischief."

A case was reported to the Cambridge Medical Society<sup>1</sup> as having been operated on by Bland Sutton, who removed appendages, and hematoma, and surrounding omentum with good recovery.

Lawson Tait,<sup>2</sup> referring to extra-peritoneal hematocele, says: "Of this variety probably 95% of the cases get well by being left alone, while the others suppurate and require to be opened. *I used to open them by the vagina, but now I open them by abdominal section, with far better results.*" (Italics, mine.)

In his Inglesby lecture on "Pelvic Hematocele,"<sup>3</sup> the substance of which might well be embodied in all modern text-books, Tait mentions a case on which he had performed abdominal section for some trouble other than hematocele, which latter, however, developed shortly after the operation. He then says: "In the case of C. T. I tapped the hematocele from the vagina and drew off a large quantity of tarry blood; but in fourteen or fifteen hours the sac had filled again, and the patient had become exsanguine. I therefore reopened the abdomen, opened the distended cavity of the broad ligament, emptied out the blood fluid and clots, sponged it out with vinegar and water, fastened the edges in the aperture to the edges of the parietal wound and placed in a drainage-tube. The patient then made a rapid recovery."

Tait's six cases of suppurating hematocele have already been referred to in the quotation from Hart and Barbour. He has operated in a similar manner, by abdominal section, in over thirty cases of pelvic abscess, all recovering.

Goelet's<sup>4</sup> case of successful laparotomy for extra-peritoneal hematocele demonstrates the difficulties to be encountered in following Martin's (Duevelius') directions for operation, by attempting to suture the sac after abdominal section and draining through the vagina. Having opened the abdominal cavity, he says: "The sac was now completely emptied, and a puncture made through the bottom into the vagina, and a large drainage-tube inserted which projected through the vulva. The rent in the peritonæum through the sac wall was carefully closed with catgut suture, but with considerable difficulty, as the walls were weak from overstretching, and in many places would tear in pulling the sutures through. The peri-

<sup>1</sup> London Lancet, Jan. 15, 1887.

<sup>2</sup> London Lancet, Sept. 4, 1886.

<sup>3</sup> London Lancet, Oct. 30, 1886.

<sup>4</sup> Annals of Gynecology, January, 1888.



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toneal cavity was then shut off from the sac cavity as completely as was possible. The peritoneal cavity was carefully sponged out, a glass drainage-tube inserted to Douglas' pouch. . . . The sac cavity was now flushed with a 2% sol. of carbol. acid through the tube in the vagina. Some of it returned by the vagina, but some escaped by the abdominal tube, showing that the peritoneal cavity was not completely shut off from that of the sac." There were some septic symptoms, convalescence was protracted, and recovery took place after two months.

In Seymour's<sup>1</sup> case of successful abdominal section there was no choice as to method of operating; it could not easily have been reached from the vagina. It belongs to that class of cases in which Byford, Beckwith, and Winkel-Parvin would sanction laparotomy as the only means of relief. The case must therefore be excluded from this comparative study, but it is nevertheless to be numbered among the successful abdominal sections for extra-peritoneal hematocele.

Dr. Fanny Berlin<sup>2</sup> reported a case of recovery after laparotomy for ante-uterine hematocele; but this was, according to the writer's own opinion, one of the *intra-peritoneal* variety, and cannot on this account be credited as a successful abdominal section for *extra-peritoneal* hematocele.

In reviewing the material here collected, I was at once struck by a feature which is quite a surprise to me, and may be as much to others. It seems hardly credible that there have hitherto been placed on record in this country only two cases of extra-peritoneal hematocele treated by abdominal section! Is it because vaginal incision has proved so safe, so universally satisfactory, that a better method cannot be devised, or is entirely useless? Or is it because fatal cases operated on by section have been purposely withheld from publication? Or have I failed to find the record of such cases for want of accessible literature? The first and second queries can be emphatically answered in the negative. All are agreed that the operation by vaginal incision is not free from danger, and it is not at all probable that a total silence on this one subject could be observed as if by concerted action. As to the third query, I am well aware that my search is not exhaustive; that it may prove to have been deficient, but not through lack of any efforts on my part. If my misgivings and hesitation to assume an isolated position in the presence of so many "crowned heads," so to speak, are dispelled by contrary facts, the responsibility must be placed at the door of others besides myself. We have seen Mundé dispose of abdominal section in short order. Byford seems ignorant of its existence. That representative work, "The Ameri-

<sup>1</sup> Am. J. Obst., September, 1888.

<sup>2</sup> Am. J. Obst., May, 1889.

can System of Gynecology," so ably edited and so highly esteemed by every gynæcologist, has elsewhere been quoted, condemning, in no uncertain tones, abdominal section in these cases as unjustifiable.

It does not seem to me probable that I have overlooked or misinterpreted American authorities. It does seem incredible that the work of Tait and Martin, whose very names are authority, should be either misrepresented or totally ignored. And this the more, since these researches lead to the inevitable conclusion that the strong advocacy of abdominal section for extra-peritoneal hæmatocele by Tait and Martin is founded upon more substantial grounds than merely the temerity with which these operators open the abdominal cavity!

Now let us sift the evidence and consider the facts as substantiated *clinically* and *post mortem*. The advocates of *vaginal incision* point out as *dangers* from that method:—

1. *Hæmorrhage*.—Though willing to endorse what Duevelius has to say about the difficulty of controlling hæmorrhage through the vagina, should it occur, I am also ready to agree with Mundé that a few weeks after the occurrence of the hæmatocele the danger of such hæmorrhage is not very great. Among all the operated cases on record I *do not find a single one* in which such an accident caused death, or even happened at all.

2. *Septicæmia*.—This is acknowledged by all to be a great source of danger, and with good cause. If suppuration is already present before the incision is made, sepsis is going on, and further absorption can be avoided or reduced to a minimum only by thoroughly cleansing the cavity of the sac of all decomposing material. If the blood accumulation is still untainted, the opening of the sac, the admission of air, the impossibility of keeping the vagina aseptic, are bound to lead to the disintegration of the clot, and hence to septic infection. The degree of this infection will be commensurate with the amount of poisonous material left in the sac, and the thoroughness and rapidity with which it can be neutralized and removed. The autopsy in Minot's case, two weeks after operation, demonstrates the presence of "a somewhat offensive, dirty-gray, soft mass, apparently disintegrating blood-clot." Zweifel says about his fatal case: "In three cases the operation was indicated by the presence of symptoms due to degeneration of the contents of the sac. In the fatal case it is his opinion that, if he had operated sooner, the result would have been different." I infer that the cause of death in this one case was septicæmia. The histories of all the successful cases, except Gusserow's, who claims to have had no sepsis, point to more or less infection during the first two weeks of convalescence. Not only do the details of the



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cases of Minot, Mundé, and Byford corroborate this assertion, but it is further confirmed by the reports of Morrill,<sup>1</sup> Reamy,<sup>2</sup> and Balleray.<sup>3</sup> When firm trabeculæ extend across the cavity, as in Minot's case, or when partitions subdivide the cavity, as in my case, the chances for septic infection, for want of thorough and rapid evacuation, are manifoldly increased.

3. *Penetration of the Injection Fluid into the Abdominal Cavity.* — This danger has certainly been underestimated: Neither Zweifel nor Mundé deem it worthy of notice; and yet, next to septicæmia, it is responsible for more deaths than any other cause. It caused the fatal termination in the Minot case. According to Mundé, "forcible injections were directly responsible in two of the four fatal cases" reported by Zweifel (unless Minot's case and one of Z. L.'s are identical). Byford's case had but a hairbreadth escape from the same source. I can recall a similar narrow escape in a case of pelvic abscess opened and irrigated through the vagina.

The *advantages* of the *vaginal incision* are said to be (Zweifel): —

1. *The Ease of Performance.* — If the operation consisted merely in making an incision through the most prominent part of the vaginal vault, this argument would be well-founded; but the clots must be broken up, the partitions destroyed, the walls scraped "carefully and gently" withal, and the cavity with weakened walls then irrigated. Any man who has it in mind to undertake this "easy" operation, had better leave it undone, unless he is thoroughly prepared to perform abdominal section on short notice. What has the ease of performing an operation to do with its safety? Under ordinary circumstances an operator will look to the safety of his patient first, and will prefer the more difficult operation, if he gain in security by so doing.

2. *A Shorter Convalescence.* — This matter allows of great latitude and is not essential; but let us follow the argument. A patient may have a cavity of the size of an orange, or of a child's head. One patient may be exsanguine; another full of sepsis; a third has some dyscrasia; and still another may be comparatively well-preserved. Can there be any standard by which the time of convalescence can be measured and compared under such circumstances? Again, a patient may be allowed to get up and be about with a drainage-tube still in the vagina, — she is then "up and about in two weeks;" but is she cured in that time? Now, what are the facts? Morrill's case recovered in thirty-seven days; Reamy's, in twelve

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<sup>1</sup> Boston Med. and Surg. Jour., December, 1875.

<sup>2</sup> Am. J. Obst., July, 1879.

<sup>3</sup> Med. News, Phila., March, 1883.

weeks; Balleray's, in four weeks; Byford's, in thirty days; Mundé's, not stated; Zweifel's fourth case was "*on her feet in two weeks*," his other cases not stated. On the other hand, Tait's cases averaged about thirty days; Martin's, not stated; Baumgärtner's recovered in thirty days; Goellet's, in two months; Seymour's, in six to eight weeks; and my own was entirely well in thirty-nine days. The facts then demonstrate that the time of convalescence is a relative matter, and that each case must be judged by concomitant circumstances.

The *dangers* from *abdominal section* are those of opening the abdominal cavity for any operation:—

1. *Shock* from large incision, prolonged exposure of viscera, or prolonged anæsthesia. All of these dangers can be greatly mitigated by proper diagnosis and thorough preparation. In my own case the operation lasted one and a half hours, but could have been completed in an hour if the diagnosis had been correct before operation. For the same reason the incision might have been shorter.

2. *Septicæmia*. This danger is reduced to a minimum by careful drainage and after-treatment. It requires no argument to demonstrate that the sac opened from above can be cleansed *at once of all* blood and fetid material, and that such *thorough work cannot be with safety* accomplished by an opening from below. For proof, read the details of the cases reported by Minot, Mundé, Byford, and the rest.

3. *Subsequent Ventral Hernia*. This can be prevented, to a great extent, by small incision, close suturing, and by avoiding haste in allowing the patient to be on her feet. The attempt to "beat the record" after any abdominal operation is reprehensible; it is no credit to the surgeon, and may permanently cripple the patient.

The *advantages of abdominal section* have already in part been given in the words of Duevelius; his argument is as true now as when he published it:—

1. *The complete control of hæmorrhage*, if there be any.
2. *The ability to keep the sac almost aseptic*.
3. "*The healing of the sac will take place most rapidly where its contents have been most thoroughly removed.*" With the hand or fingers (much safer than the curette) in the sac cavity, any bridge or partition can be broken up, all the clots scooped out, and the wall properly washed, without force or danger of rupture of the sac. This is done *with the cavity exposed, and not in the dark*. Weak spots in the sac can be noted and repaired. In my case the uterus was utilized in filling a gap of softened sac wall.

4. *Any other condition in the abdominal cavity requiring inter-*



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*ference can be simultaneously remedied.* Thus, in Minot's case, the encysted serous accumulation could have been destroyed. In Galabin's case a pyosalpinx was removed. Bland Sutton removed the appendages and part of the omentum. Byford conceded this advantage when he says: "The possibility of the presence of extra-uterine pregnancy, ovarian tumor, serous peritonitis, fibroid or fibro-cystic tumor of the uterus, etc., makes it advisable to use the aspirating needle previous to using the knife."

Of all the cases of abdominal section here collected, two have proved fatal. These were among the first four operated on by Martin about 1881. Since then not a single fatal case is recorded. The question suggests itself whether, with the light of to-day, these operations were really indicated. Not having access to the details, I may be wrong in my surmises; but none were larger than "a man's hand," and their contents were "almost entirely blood-clots." At that early day the technique of, and thorough antisepsis in, abdominal surgery were in their infancy, so to speak; while the antisepsis used in vaginal incision in 1885, the date of the report of Zweifel's cases, was carried out fully as well as it is to-day. The cause of death in one case was collapse; the other died of septic peritonitis. Both shock and sepsis can now be much better guarded against than at that time. Can we avoid death from penetration of injection fluid any better now than when these deaths occurred?

While I have limited this record to the seven (six and one) successful cases of Tait, because they were extra-peritoneal hematoceles, his thirty cases of pelvic abscess, operated on in a similar manner, must be conceded to strongly fortify my position in favor of abdominal section. The opening of a pelvic abscess by the abdomen, before adhesion between abscess wall and parietes has taken place, is certainly more dangerous than a similar opening of a sac containing only blood, and just as dangerous as one containing disintegrating blood-clots. Yet these thirty abscess cases were thus opened without a single fatality.

If we reflect a moment, we must admit that a hematocele, not pathologically, but analogically, may be considered the first and most favorable stage of abscess. Does it not, in the course of a few weeks, when not absorbed, disintegrate and suppurate? Is it not a fact that most of the cases reported are already in a state of disintegration; hence, virtually, abscesses? Mundé's first case contained only blood, but was soon converted into a fetid abscess, because it had not been properly evacuated. The same can be said of Byford's case. My case contained only blood, and was prevented from advancing to the stage of abscess by the facility with which the sac was continually kept dry and empty.

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I will not, however, attempt to screen abdominal section by excluding Martin's first four cases, and thus shirking the responsibility for the only two recorded deaths, nor by adding Tait's thirty cases of pelvic abscess to decrease the mortality rate. Assuming that Zweifel's statistics are correct, the case stands thus:—

### OPERATION BY VAGINAL INCISION.

|                                      |                 |                          |   |
|--------------------------------------|-----------------|--------------------------|---|
| Zweifel (collected)                  | . . . . .       | 30 cases, with 4 deaths. |   |
| Minot (unless included among the 30) | . . . . .       | 1 case, “ 1 death.       |   |
| Morrill                              | “ “ “ “ “ . . . | 1 “                      |   |
| Reamy                                | “ “ “ “ “ . . . | 1 “                      |   |
| Balleray                             | “ “ “ “ “ . . . | 1 “                      |   |
| Mundé .                              | . . . . .       | 3 cases.                 |   |
| Byford .                             | . . . . .       | 1 case.                  |   |
| Philips .                            | . . . . .       | 1 “                      |   |
| Gusserow                             | . . . . .       | 8 cases.                 |   |
|                                      |                 | 47                       | 5 |
| Total .                              | . . . . .       |                          |   |

### OPERATION BY ABDOMINAL SECTION.

|               |           |                         |   |
|---------------|-----------|-------------------------|---|
| Martin .      | . . . . . | 8 cases, with 2 deaths. |   |
| Baumgärtner . | . . . . . | 1 case.                 |   |
| Tait .        | . . . . . | 7 cases.                |   |
| Galabin .     | . . . . . | 2 “                     |   |
| Sutton .      | . . . . . | 1 case.                 |   |
| Seymour .     | . . . . . | 1 “                     |   |
| Goelet .      | . . . . . | 1 “                     |   |
| Rosenwasser . | . . . . . | 1 “                     |   |
|               |           | 22                      | 2 |
| Total .       | . . . . . |                         |   |

Conceding, then, that these statistics may not be complete, and that the unpublished fatal cases after vaginal incision<sup>1</sup> do not outnumber similar cases after abdominal section, and allowing no discount on Martin's first cases, — conceding all these adverse factors, the results after abdominal section stand a little above par when compared with those after vaginal incision. Total number collected by *abdominal section*, *twenty-two, with two deaths, or a mortality of 9.09 per cent.* Total by *vaginal incision* *forty-seven, with five deaths, or a mortality of 10.63 per cent.* Even if a few are duplicated among the thirty cases, there remain *forty-*

<sup>1</sup> A fatal case of this kind occurred a month or two ago at St. Alexis Hospital in this city. Cause of death, septicæmia.



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*three, with four deaths; mortality, 9.3 per cent.* I hope this impartial showing will suffice to demonstrate that *abdominal section is*, to say the least, *a feasible, justifiable, and most emphatically the preferable, operation.* This operation for extra-peritoneal hematocele, when surgical interference is required, is as much an advance over vaginal incision as was the latter an improvement over puncture. I would add a third to the two propositions proved by Duevelius "in considering this method of treatment in connection with others:" —

1. The danger is lessened.
2. The chance of radical cure and shorter convalescence is greater.
3. The chance is afforded of simultaneously removing other diseased conditions.

There are two distinct methods of performing abdominal section for extra-peritoneal hematocele: the one practised by Tait, who "fastens the edges in the aperture (of the sac) to the edges of the parietal wound, and puts in a drainage-tube." The other practised by Martin (Duevelius), who, after having opened the peritoneal cavity, passes a drainage-tube into the vagina (through Douglas' pouch), and closes the sac from the abdominal cavity; or, if he cannot accomplish this, he attaches the borders of the sac to the drainage-tube. While Goelet followed Martin's method by attempting to shut off the sac from the abdominal cavity, I followed Tait's method, draining through the parietal wound only. Vaginal drainage was rejected, not because of any knowledge of what Tait or any one else had done, but from the application of the principles of aseptic surgery at present everywhere accepted. Our varied experiences serve to demonstrate the relative value of the two methods. Goelet could not keep his wound aseptic. There was a communication between vagina and abdominal cavity, which caused much trouble, and prolonged the convalescence of the patient. In my case the cavity of the sac remained extra-peritoneal, and cleanliness was rendered absolutely perfect. I would therefore recommend the method practised by Tait as the safer and the more feasible.

If a diagnostic error has been the means of saving my patient's life and of extending my own limited store of knowledge, the mistake has been fully atoned for. If it has brought more prominently before the profession a useful, though much neglected, method of operation, I shall feel undeservedly repaid for my pains. The credit is due to error, not to merit.







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